

Amendment to the Claims:

Please cancel claims 13, 15, 16, 18, 20, 21, and 23 – 25, and enter the new claims 26 – 38 below.

In the claims:

Applicant hereby restates the claims of the present application as follows, which replaces any previous claim listing:

1 – 25. (Canceled)

26. (New) A hydraulic transmission system for deriving power from a flow of water, the system comprising:

a water current turbine assembly submerged in a body of water containing a current, the water current turbine assembly including

a flowing water actuatable rotor coupled to a rotor shaft, the rotor operationally responsive to the water current to rotate the rotor shaft,

a pump system for a hydraulic fluid supplied from the body of water, avoiding pollution of the body of water when leakage of the hydraulic fluid occurs, the pump system pressurizing the hydraulic fluid to actuate a power producing assembly actuating a power generator, the pump system comprising

at least one low speed, high pressure pump directly coupled to the rotor shaft, and a substantially closed pressure circuit comprising a fluid supply line connected between the at least one pump and the power producing assembly and a fluid return line connected between the power producing assembly and the at least one pump,

the rotor shaft configured to directly drive the at least one pump to pressurize continuously the hydraulic fluid within the fluid supply line to be applied to the power producing assembly as a smooth continuous jet flow through at least one nozzle, where after application of the pressurized hydraulic fluid to the power producing assembly the hydraulic fluid is returned gravitationally by way of the fluid return line to the at least one pump for retransmission in the pump system to the power producing assembly, and

means for making up hydraulic fluid leakage from the hydraulic transmission system to the body of water, to introduce the make up hydraulic fluid to the fluid return line,

the power producing assembly being positioned above the water current turbine assembly and including a hydraulic motor configured to rotate in response to the jet flow through the at least one nozzle at a rotation rate higher than and independent of the rotor shaft, the hydraulic motor being coupled to a drive shaft of the power generator.

27. (New) The system of claim 26, wherein the pump system comprises a plurality of positive displacement pumps.

28. (New) The system of claim 27, wherein the plurality of pumps are operationally directly coupled to the common rotor shaft rotated by the rotor driven by the water current.

29. (New) The system of claim 28, wherein the pump system comprises a cam drive coupled to the rotor shaft, each pump being symmetrically disposed around the cam drive of the rotor shaft.

30. (New) The system of claim 26, wherein the pump system includes a plurality of low speed, high pressure pumps directly operated by the rotation of the rotor shaft, each pump having a fluid inlet including a non-return valve to control the

entrance of the hydraulic fluid from the fluid return line, and a fluid outlet including a non-return valve to control the exit of the hydraulic to the fluid supply line.

31. (New) The system of claim 26, wherein the power producing assembly comprises a Pelton wheel.

32. (New) The system of claim 26, wherein the pump system further comprises a pressure balancing tank coupled to the fluid supply line to absorb vibrational energy of the rotor shaft.

33. (New) The system of claim 26, wherein the pump system includes a plurality of low speed, high pressure pumps circumferentially arranged around a longitudinal axis of the rotor shaft, each pump directly operated by the rotation of the rotor shaft, wherein actuation of each pump pressurizes the hydraulic fluid of each pump, the pressurized hydraulic fluid being supplied to a pressure plenum coupling each pump to the fluid supply line.

34. (New) The system of claim 26, wherein the pump system includes a plurality of low speed, high pressure pumps circumferentially arranged around a longitudinal axis of the rotor shaft, each pump directly operated by the rotation of the rotor shaft, and wherein the means for making up hydraulic fluid leakage comprises an intake receiving the make up hydraulic fluid from the body of water, a filter coupled to the intake filtering the make up hydraulic fluid received through the intake, a header tank coupled to the filter storing the filtered make up hydraulic fluid, and a make up fluid return line connected between the header tank and the plurality of pumps, where the filtered make up hydraulic fluid is returned to the plurality of pumps, wherein the make up fluid return line and the fluid return line are coupled, combining and returning the return hydraulic fluid and the make up hydraulic fluid to a return plenum coupling each pump to the fluid return line.

35. (New) The system of claim 26, wherein the means for making up hydraulic fluid leakage comprises an intake receiving the make up hydraulic fluid from the body of water, a filter coupled to the intake filtering the make up hydraulic fluid received through the intake, a header tank coupled to the filter through a make up fluid supply line, storing the filtered make up hydraulic fluid, and a make up fluid return line connected between the header tank and the plurality of pumps, where the filtered make up hydraulic fluid is returned to the plurality of pumps.

36. (New) The system of claim 35, wherein a water static level of the header tank is immediately below the power producing assembly, where when the level of the hydraulic fluid in the fluid return line falls below the water static level of the header tank, more make up hydraulic fluid flows from the header tank through the make up fluid return line to the plurality of pumps.

37. (New) The system of claim 36, wherein a level sensor monitors the water static level of the header tank and controls the amount of the make up hydraulic fluid entering into the header tank, where when the water static level has fallen below a predetermined level, a small pump coupled to the make up fluid supply line pumps the make up hydraulic fluid from the body of water.

38. (New) The system of claim 26, wherein the hydraulic motor is coupled to a drive shaft of the power generator through pulleys and a belt transmission.